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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/642,481

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Nobuyuki Enomoto

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MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC
8321 OLD COURTHOUSE ROAD
SUITE 200
VIENNA, VA 22182-3817

EXAMINER

BIAGINI, CHRISTOPHER D

ART UNIT

PAPER NUMBER

2142

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/642,481	Applicant(s) ENOMOTO ET AL.	
	Examiner CHRISTOPHER D. BIAGINI	Art Unit 2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-9, 11-15, 18-24, 26-30, 33-39 and 41-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-9, 11-15, 18-24, 26-30, 33-39 and 41-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/12/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to the rejection of claims 3-14, 18-29, and 33-44 under 35 USC 102(e) have been fully considered and are persuasive. Accordingly, the rejection is withdrawn.

Applicant's arguments with respect to the rejection of claims 15, 30, and 45 under 35 USC 102(e) have been fully considered and are persuasive. Accordingly, the rejection is withdrawn.

Applicant's arguments with respect to the information disclosure statement have been fully considered and are persuasive. Accordingly, the IDS has been considered by the examiner.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 3-9, 11-15, 18-24, and 26-30 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims may all be reasonably interpreted as encompassing embodiments which consist entirely of software. Software, absent a structurally and functionally interrelated computer-readable medium, is not statutory subject matter.

Claim Rejections - 35 USC § 112

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3-5, 7-9, 11-15, 18-20, 22-24, 26-30, 33-35, 37-39, and 41-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3, 18, and 33, as well as many claims dependent therefrom, contain the term "MAC SA." Although the abbreviation "MAC" is generally accepted in the art to refer to the Media Access Control sub-layer in the OSI model, the abbreviation "SA" is not one that has a standard accepted meaning. Thus, the claims are unclear. For the purposes of this action, the abbreviation will be interpreted to mean "source address."

Claims 3, 18, and 33 recite the limitation "said MAC SA," but there is insufficient antecedent basis for this limitation in the claims. Although the claims previously introduce a "MAC SA table cache," this does not refer to a MAC source address in particular.

Claims 3 and 18 recite the limitation "and the MAC SA table cache which stores a source MAC address which has made a learning frame transmission request," but this limitation is unclear.

Claims 15, 30, and 45 recite the limitation "wherein a node...sends an asymmetrical main signal frame to an Ethernet," but this limitation is unclear. It is not clear what is meant by the

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term "asymmetrical frame," since "symmetry" is not a characteristic that is generally applied to network transmissions. Furthermore, it is not clear what is meant by the term "an Ethernet." The term "Ethernet" identifies a particular protocol, not a physical thing upon which network information may be transmitted.

Any claim not specifically addressed above is rejected at least for incorporating the deficiencies of a claim upon which it depends.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-9, 12, 13, 15, 18-24, 27, 28, 30, 33-39, 42, and 43 rejected under 35 U.S.C.

103(a) as being unpatentable over ANSI/IEEE Std. 802.1D, 1998 Edition (hereinafter "the 802.1D specification") in view of Williams et al. (US Patent No. 6,515,993, hereinafter "Williams").

Regarding claim 3, the 802.1D specification shows a network system for a network having plural nodes connected (see Fig. 7.1), wherein a node (comprising a bridge) belonging to said network comprises:

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- a learning frame management unit (comprising a forwarding process) which refers to a MAC SA table cache (comprising querying a filtering database) to determine whether a learning frame transmission request corresponding to said MAC SA has been made (comprising determining whether a frame has been received that indicates an address-port mapping: see section 7.9.5 on p. 47 and section 7.8 on p. 42),
- a MAC forwarding table memory (comprising a filtering database) which stores an output port for a destination MAC address (see section 7.9 on p. 42 and section 7.9.2 on p. 44), and
- the MAC SA table cache which stores a source MAC address which has made a learning frame transmission request (note that entries made by the learning process are based on the source address of frames: see section 7.8 on p. 42).

The 802.1D specification does not show that the MAC forwarding table stores an output port for tag operations.

Williams shows storing an output port for tag operations (see table 601 in Fig. 6 and col. 10, lines 60-63).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the 802.1D specification with the port-tag mappings taught by Williams in order to provide the ability to tag a frame that is to be transmitted via a tagged port (see Williams, col. 2, lines 30-33).

Regarding claim 4, the combination of the 802.1D specification and Williams shows the limitations of claim 3 as applied above, and the 802.1D specification further shows wherein said

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nodes comprise an aging request acceptance unit which ages said MAC SA table cache (see first paragraph on p. 45), and a transmission request unit which makes a learning frame transmission request (comprising a bridge port which receives a frame and sends it to a learning process: see Fig. 7-5 and section 7.8 on p. 42). Note that the learning process uses the learning frame transmission request to manage a table (comprising the filtering database).

The 802.1D specification does not explicitly show sending the request to a CPU.

Williams shows a CPU managing a table (see col. 10, lines 57-61).

It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the 802.1D specification to use a CPU as taught by Williams in order to implement the specification with readily available computing hardware.

Regarding claim 5, the combination of the 802.1D specification and Williams shows the limitations of claim 4 as applied above, and the 802.1D specification further shows wherein said nodes have a learning management program which conducts a learning frame process (see section 7.8 on p. 42).

Regarding claim 6, the 802.1D specification shows a network system for a network having plural nodes connected, wherein a node belonging to said network comprises:

- a learning management program which conducts a learning frame process (see section 7.8); and
- a software table (comprising a filtering database: see section 7.9).

The 802.1D specification does not show wherein a network control program uses a set of memory duplicate information to perform an entry search in the software table.

Williams shows a network control program using a set of memory duplicate information to perform an entry search in the software table (see Fig. 6 and col. 10, line 57 to col. 11, line 21).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the 802.1D specification with the entry search taught by Williams in order to provide the ability to tag a frame that is to be transmitted via a tagged port (see Williams, col. 2, lines 30-33).

Regarding claim 7, the combination of the 802.1D specification and Williams shows the limitations of claim 3 as applied above, and the 802.1D specification further shows wherein said node has an equipment control program which conducts a variety of configurations (comprising the configuration of reserved addresses, static filtering information, and traffic class information: see section 7.1.2).

Regarding claim 8, the combination of the 802.1D specification and Williams shows the limitations of claim 3 as applied above, and the 802.1D specification further shows said node comprises a frame type judgment unit which judges an input frame (comprising a forwarding process, which judges whether to forward incoming frames, and where to forward them to: see section 7.7.2).

Regarding claim 9, the combination of the 802.1D specification and Williams shows the limitations of claim 3 as applied above, and the 802.1D specification further shows wherein a node belonging to said network comprises: an aging control unit which ages an entry to be aged (comprising the unit which ages entries in the filtering database: see first paragraph of p. 45), and an aging management table which stores an entry to be aged (comprising the filtering database, which stores the dynamic filtering entries which are aged).

Regarding claim 12, the combination of the 802.1D specification and Williams shows the limitations of claim 3 as applied above, and further shows wherein said node comprises a tag forwarding table memory which stores an output port for a forwarding tag (comprising the memory which holds tables 601 and 603 in Fig. 6: see Williams, col. 10, line 57 to col. 11, line 21).

Regarding claim 13, the combination of the 802.1D specification and Williams shows the limitations of claim 3 as applied above, and the 802.1D specification further shows wherein said node comprises: a table (filtering database: see section 7.9); an aging circuit (comprising the circuit which ages entries in the filtering database: see p. 45); and a forwarding table having a table read/write circuit (comprising a filtering database, which necessarily has a read/write circuit because it can be read from and written to: see p. 33).

Regarding claim 15, the 802.1D specification shows a network system for a network having plural nodes connected (see Fig. 7-1 on p. 31), and further shows maintaining a learning

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information while sending frames (see section 7.8), but does not explicitly show wherein a node belonging to said network sends an asymmetrical main signal frame to an Ethernet.

Williams shows a node sending an asymmetrical main signal frame to an Ethernet (comprising sending Ethernet frames at different rates on different ports: see col. 4, lines 16-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the 802.1D specification with the asymmetrical main signal frame and Ethernet taught by Williams in order to support multiple network speeds.

Claims 18-20, 22-24, 27, and 28 are apparatus claims corresponding to system claims 3-5, 7-9, 12, and 13 and are rejected for the same reasons as applied above.

Claims 33-35, 37-39, 42, and 43 are method claims corresponding to system claims 3-5, 7-9, 12, and 13 and are rejected for the same reasons as applied above.

Claim 21 is an apparatus claim corresponding to system claim 6 and is rejected for the same reasons as applied above.

Claim 36 is a method claim corresponding to system claim 6 and is rejected for the same reasons as applied above.

Claim 30 is an apparatus claim corresponding to system claim 15 and is rejected for the same reasons as applied above.

Claim 45 is an method claim corresponding to system claim 15 and is rejected for the same reasons as applied above.

Claims 11, 14, 26, 29, 41, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over ANSI/IEEE Std. 802.1D, 1998 Edition ("the 802.1D specification") in view of Williams (US Patent No. 6,515,993).

Regarding claim 11, the combination of the 802.1D specification and Williams shows the limitations of claim 3 as applied above, but does not explicitly show wherein said node comprises a broadcast table memory which stores an output destination port at a time of broadcasting to a tag.

Liu shows a broadcast table memory which stores an output destination port at a time of broadcasting to a tag (see [0023]-[0024]).

It would have been obvious to one of ordinary skill in the art to further modify the 802.1D specification to store an output destination port at a time of broadcasting to a tag in order to prevent the system from having to calculate the port repeatedly (see Liu, [0024]).

Regarding claim 14, the combination of the 802.1D specification and Williams shows the limitations of claim 3 as applied above, but does not explicitly show wherein said node comprises a TAG address management table which stores an address of a forwarding tag on a MAC forwarding table memory.

Liu shows a tag address management table which stores an address of a forwarding tag (see [0022]).

It would have been obvious to one of ordinary skill in the art to further modify the 802.1D specification to store an address of a forwarding tag as taught by Liu in order to provide for efficient distribution of broadcast messages to that tag (see Liu, [0007]).

Claims 26 and 29 are apparatus claims corresponding to system claims 11 and 14, and are rejected for the same reasons as applied above.

Claims 41 and 44 are method claims corresponding to system claims 11 and 14, and are rejected for the same reasons as applied above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER D. BIAGINI whose telephone number is (571)272-9743. The examiner can normally be reached on weekdays from 8:30 AM to 5:00 PM..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571) 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christopher Biagini
(571) 272-9743

/Andrew Caldwell/
Supervisory Patent Examiner, Art Unit 2142